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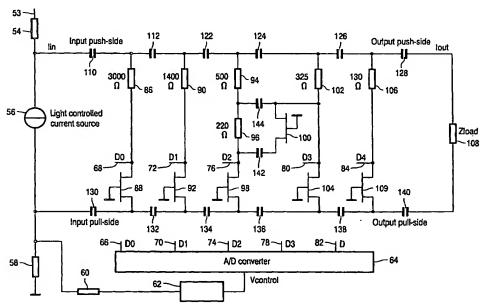
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[Continued on next page]

(54) Title: OPTICAL RECEIVER CIRCUIT



(57) Abstract: An optical receiver circuit comprising an optical converter circuit (38), comprising a photodiode and converting optical power into electrical power, a sensor circuit for deriving a control voltage VCONTR as a characteristic value of the electrical power output by the optical converter circuit (38); and an attenuator circuit (44) having a variable attenuation, the attenuation being controlled by the characteristic value of the electrical power output by the sensor circuit so as to obtain a constant output signal level of the optical receiver circuit. An output circuit is also provided and comprises a matching network (46), an amplifier stage (48) and an output transformer (50).





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Category °	Cilation of document, with indication, where appropriate, of the relevant passages	Helevani to ciaim No.
x	US 4 262 366 A (EUMURIAN GREGOIRE) 14 April 1981 (1981-04-14) abstract figure 2 column 4, line 54 - line 57 claims 1-4	1-3,5
Α	US 6 122 084 A (BRITZ DAVID MICHAEL ET AL) 19 September 2000 (2000-09-19) abstract column 2, line 15 - line 23 claims 1,2,7 figures 1,2	1-3,5

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Date of the actual completion of the international search	Date of mailing of the International search report
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Internation No PCT U3/02989

C.(Continuation) DOCUMENTS CONSIDE TO BE RELEVANT										
Category °		Relevant to claim No.								
A	US 6 215 584 B1 (DIGNAM MARC M ET AL) 10 April 2001 (2001-04-10) abstract column 3, line 34 - line 67 column 4, line 33 - line 53 column 5, line 35 - line 65 column 6, line 28 - line 37 claims 1,3,9,14; figure 3	4,6-10								

INTERNATIONAL SEARCH REPORT

PCT U3/02989

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 4262366	A	14-04-1981	FR DE EP ES JP	2423093 / 2962770 0004815 / 479443 / 54137903 /	D1 A2 A1	09-11-1979 01-07-1982 17-10-1979 01-02-1980 26-10-1979
US 6122084	Α	19-09-2000	NONE			
US 6215584	B1	10-04-2001	AU WO CA CN EP JP	4902300 0069099 2334890 1304596 1095474 2002544710	A1 A1 T A1	21-11-2000 16-11-2000 16-11-2000 18-07-2001 02-05-2001 24-12-2002